# PLANNING A SMART SYNTHETIC ENVIRONMENT THRU M&S REUSE

*Presented by*

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# What Does "Re-Use" Mean?

**Re-use:**

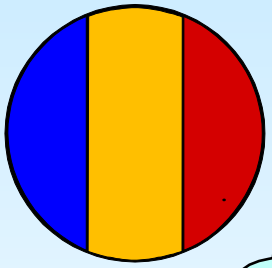
- What Is It?
- Where Does It Start?
- What Can "Re-use" Do for the Army?
- Where Do We Go From Here?

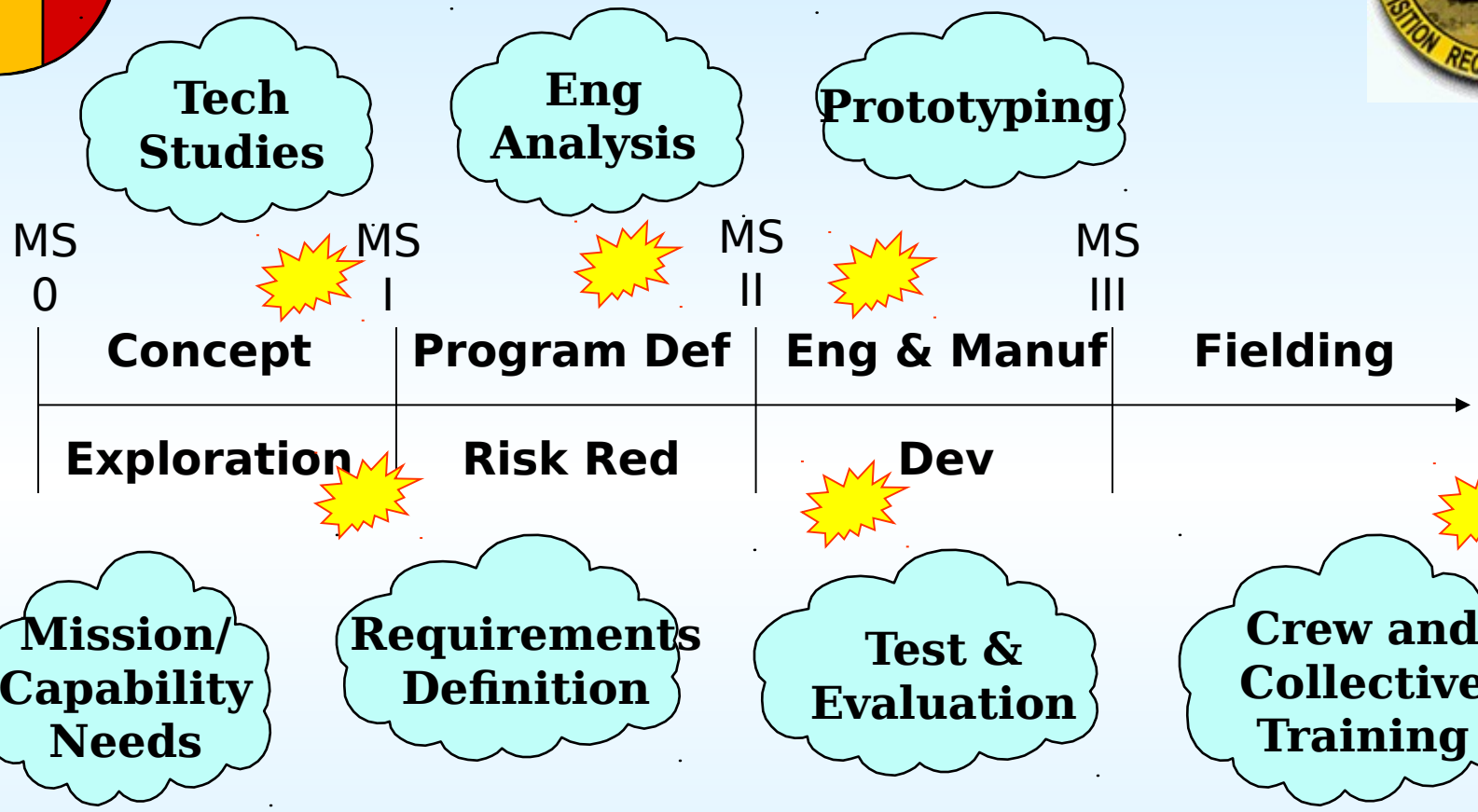
# What Is "Re-use"?

**M&S "Re-use" can be:**

- **Reuse of existing code/algorithms**
- **Data**
  - **Performance: Reliability, Survivability, Speed, Lethality, Size, …**
  - **Behavioral: Individual and Organization TTPs**
  - **Environment: Scenarios, Terrain, Force Structure, Weather, Cultural**

# Old Process



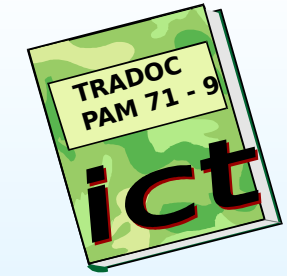



= Separate M&S Used for Each Area!

Merge Tools for Shared Information ??

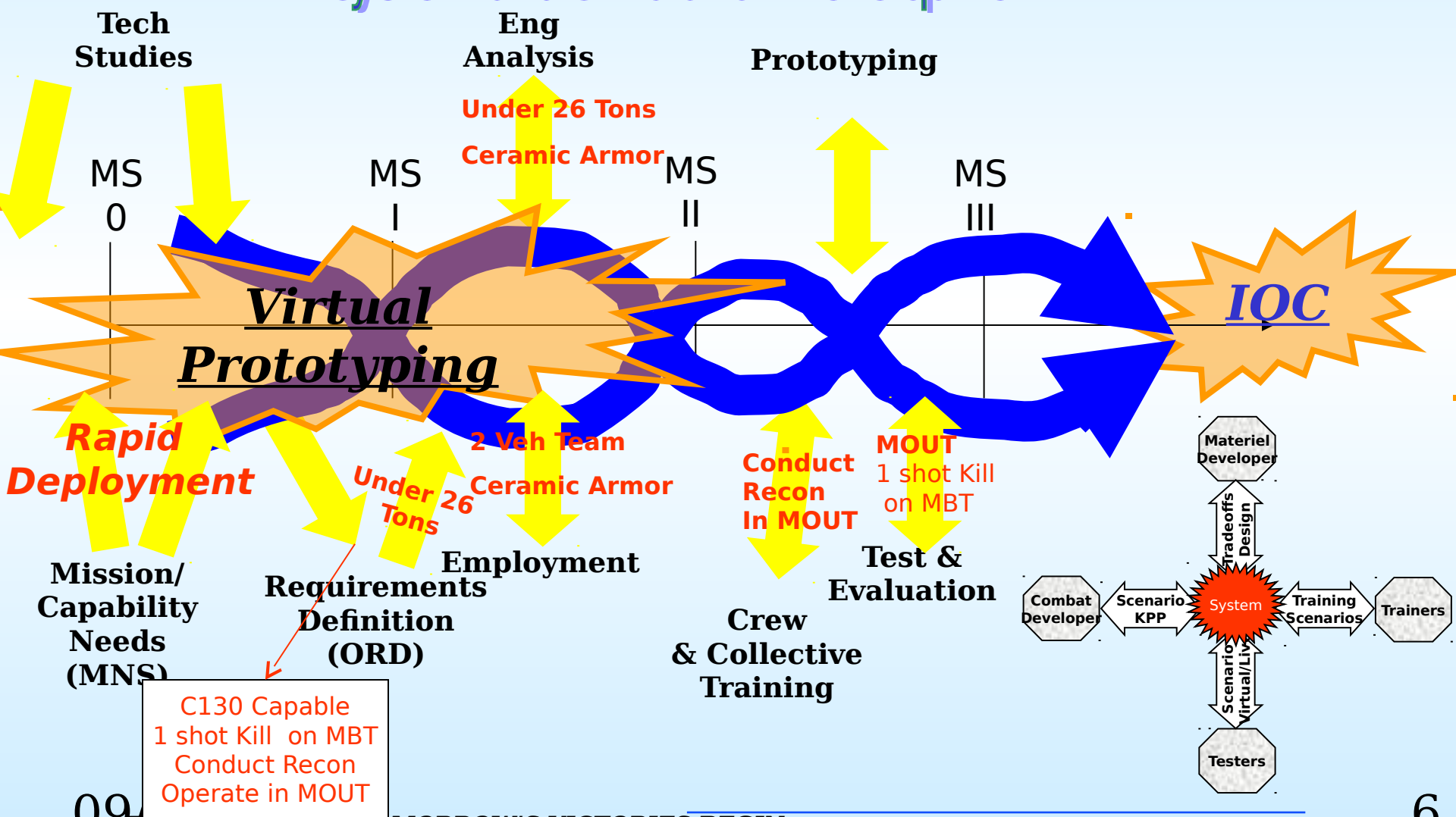
# Where Does "Reuse" Start?

- **Starts with:**
  - **Standardized M&S Framework**
    - **Communication (HLA)**
    - **Common World View (Scenarios, Terrain, Enemy)**
    - **Data Standards**
  - **Early Planning and Implementation**
  - **Early Partnership between the ACR, RDA, and TEMO Domains**



# S.M.A.R.T. Environment

## System and Simulation Development



# What Can Re-use Do for the Army?

**Transfer the DATA <u>used to Derive Detailed Requirements</u> to the Materiel**

=

**Correct Translation of Materiel Need (Requirements: Performance –**

Automatically adjust to light source
Strain on soldiers' eyes
McKenna MOUT

# What Can Re-use Do for the Army?

**Rapid Collaboration and Adjustments between Domains in regards to Performance vs Costs**

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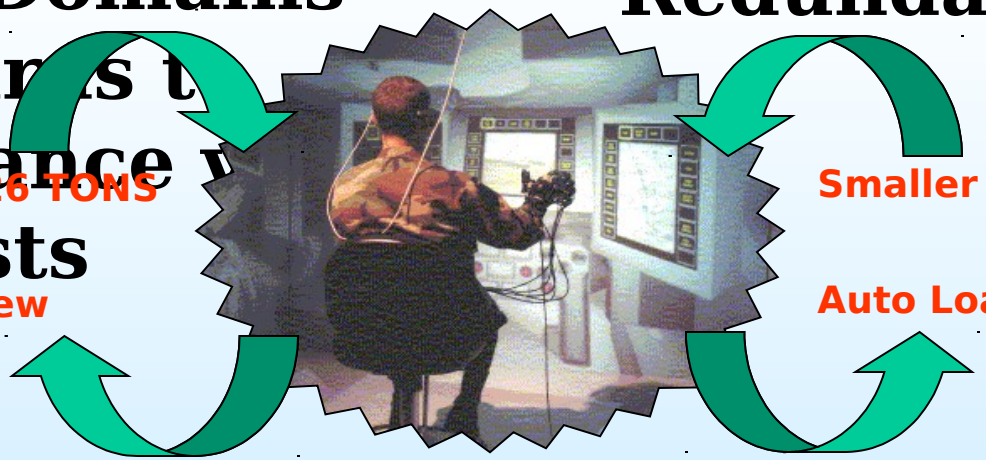
**Reduced Total Ownership Costs (Less $$ Spent on Redundant M&S)**



# What Can Re-use Do for the Army?

**Testing Community Confidently reuses Synthetic Environment**

=

**'Get it Right the First Time' Provided Insights Aide in Accurate and Efficient Live Fire Testing**

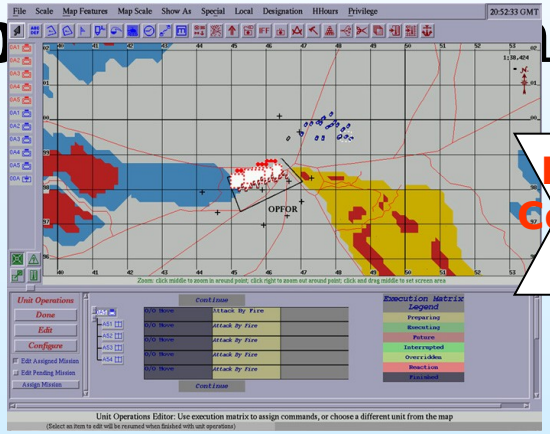
**90% Hit @ 8kms**
**Reload in 60 Seconds**
**Non-Lethal Munitions in MOUT**

# What Can Re-use Do for the Army?

**Doctrine and Training Support Firmly Established**

**=**

**More Effective, Cost Efficient Training at Individual, Crew, and**



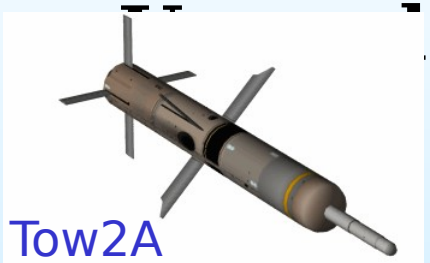

**Internal Training Package**
**Correlate Enemy SIT in 10m**
**Operate in MOPP 4**

# What Can Re-use Do for the Army?

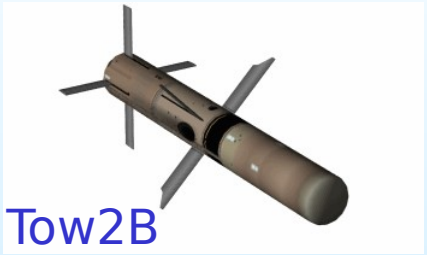
**Positions Materiel and Training for Cost Effective**

**=**

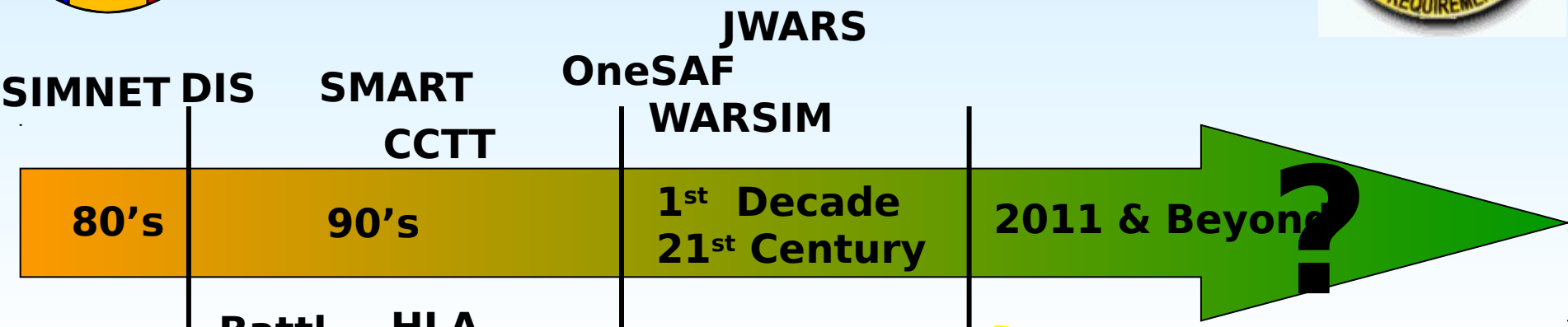
**Reduce $$ and Time to Upgrade Systems to Extend Their Life Cycle**




**Defeat Reactive/Composite Armor**
**Engage Multiple Targets Drill**
**Acquire Target in 100°+ TEMP**



# Where Do We Go From Here?




RDECs

Battle Labs

HLA

M&S Repositories

Re configurable Virtual Simulators (ACRT)

Virtual Prototypes (TARDEC CAVE)

– Common Data Themes
– Incorporate Standard Scenarios Across the Life Cycle
– Databases: Terrain/Enemy
– Capture/define early the Performance and Behavioral data

Virtual

Will not Realize Full Potential For Reuse Until We Get Here!